EXHIBIT A

1-27. (Cancelled)

28. (New)

A method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment, comprising:

a. establishing said plurality of nonhuman female mammals;

b. utilizing an estimate of an economic cost of inducing early puberty in substantially all of said plurality of nonhuman female mammals;

c. utilizing an estimate of a biological cost of inducing said early puberty in said substantially all of said plurality of nonhuman female mammals;

d. utilizing an estimate of an economic gain of harvesting said substantially all of said plurality of nonhuman female mammals;

e. utilizing an estimate of a biological gain of harvesting said substantially all of said plurality of nonhuman female mammals;

f. utilizing a time interval, wherein said time interval begins at the time of inducing said early puberty in said substantially all of said plurality of nonhuman female mammals, and wherein said time interval ends at the time of harvesting said substantially all of said plurality of nonhuman female mammals, and wherein said time interval results in a net economic gain and a net biological gain;

g. inducing said early puberty in said substantially all of said plurality of nonhuman female mammals;

h. fertilizing at least one egg derived from each of said substantially all of said plurality of nonhuman female mammals, wherein fertilizing said at least one egg comprises fertilizing said at least one egg with a plurality of sex-sorted spermatozoa;

i. producing offspring from said substantially all of said plurality of nonhuman female mammals, wherein said offspring are produced prior to the typical age of puberty of said substantially all of said plurality of nonhuman female mammals, and wherein said offspring comprise substantially all female offspring; and

j. harvesting said substantially all of said plurality of nonhuman female mammals upon the expiration of said time interval.

29. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, wherein said plurality of nonhuman female mammals comprises a bovine plurality of nonhuman female mammals.

30. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said plurality of sex-sorted spermatozoa comprises a number of spermatozoa selected from the group consisting of no more than 10 million live non-frozen spermatozoa, no more than 5 million live non-frozen spermatozoa, no more than 3 million live non-frozen spermatozoa, no more than 1 million live non-frozen spermatozoa, no more than 500,000 live non-frozen spermatozoa, no more than 250,000 live non-frozen spermatozoa, and no more than 100,000 live non-frozen spermatozoa.

31. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said plurality of sex-sorted spermatozoa comprises a number of spermatozoa selected from the group consisting of no more than 10 million frozen-thawed spermatozoa, no more than 5 million frozen-thawed spermatozoa, no more than 3 million frozen-thawed spermatozoa, no more than 1 million frozen-thawed spermatozoa, no more than 500,000 frozen-thawed spermatozoa, no more than 250,000 frozen-thawed spermatozoa, and no more than 100,000 frozen-thawed spermatozoa.

32. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said step of inducing said early puberty in said substantially all of said bovine plurality of nonhuman female mammals comprises inducing said early puberty between about 250 days after birth to about 270 days after birth.

33. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said step of inducing said early puberty in said substantially all of said bovine plurality of nonhuman female mammals comprises feeding said substantially all of said bovine plurality of nonhuman female mammals a sufficient ration of feed to produce an average weight gain of about 1.3 kilograms per day to about 1.4 kilograms per day.

34. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, further comprising the step of early weaning said offspring of said substantially all of said bovine plurality of nonhuman female mammals.

35. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 34, wherein said step of early weaning said offspring comprises weaning said offspring at between about 95 days to about 125 days after birth.

36. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said step of fertilizing said at least one egg derived from each of said

substantially all of said bovine plurality of nonhuman female mammals comprises fertilizing said at least one egg derived from each of said substantially all of said bovine plurality of nonhuman female mammals between about 283 days after birth to about 316 days after birth.

37. (New)
The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, further comprising the step of synchronizing estrous of said substantially all of said bovine plurality of nonhuman female mammals.

38. (New)
The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 37, wherein said step of synchronizing estrous of said substantially all of said bovine plurality of nonhuman female mammals comprises:

a. dressing feed with MGA at 0.5 milligrams per female of said substantially all of said bovine plurality of nonhuman female mammals per day for 14 days; and

b. injecting PGF2 19 days after the last day of dressing said feed with said MGA.

39. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said step of harvesting said substantially all of said bovine plurality of nonhuman female mammals comprises harvesting said substantially all of said bovine plurality of nonhuman female mammals prior to about 24 months of age of said substantially all of said bovine plurality of nonhuman female mammals.

40. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 29, wherein said step of harvesting said substantially all of said bovine plurality of nonhuman female mammals comprises harvesting said substantially all of said bovine plurality of nonhuman female mammals prior to about 30 months of age of said substantially all of said bovine plurality of nonhuman female mammals.

41. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, wherein said plurality of nonhuman female mammals comprises an equine plurality of nonhuman female mammals.

42. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 41, wherein said plurality of sex-sorted spermatozoa comprises a number of spermatozoa selected from the group consisting of no more than 25 million live non-frozen spermatozoa, no more than 15 million live non-frozen spermatozoa, no more than 10 million live non-frozen spermatozoa, and no more than 5 million live non-frozen spermatozoa.

43. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 41, wherein said plurality of sex-sorted spermatozoa comprises a number of spermatozoa selected from the group consisting of no more than 25 million frozen-thawed spermatozoa, no more than 15 million frozen-thawed spermatozoa, no more than 10 million frozen-thawed spermatozoa, and no more than 5 million frozen-thawed spermatozoa.

44. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, wherein said plurality of nonhuman female mammals is selected from the group consisting of ovine, porcine, and goats.

45. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, wherein said plurality of sex-sorted spermatozoa comprises a number of spermatozoa from about 10% to about 50% relative to a typical number of unsexed spermatozoa in an artificial insemination sample for said plurality of nonhuman female mammals.

46. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, wherein said substantially all female offspring comprises a percentage of said substantially all female offspring selected from the group consisting of at least 70% female offspring, at least 80% female offspring, and at least 90% female offspring, and wherein said plurality of nonhuman female mammals is selected from the group consisting of bovine, equine, ovine, porcine, and goats.

47. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, further comprising the step of early weaning said offspring of said substantially all of said plurality of nonhuman female mammals.

48. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, further comprising the step of synchronizing estrous of said substantially all of said plurality of nonhuman female mammals.

49. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, further comprising the step of replacing said substantially all of said plurality of nonhuman female mammals after harvesting said substantially all of said plurality of nonhuman female mammals with said substantially all female offspring.

50. (New)

The method of managing a plurality of nonhuman female mammals for increased economic and biological efficiency in a commercial environment as described in claim 28, wherein said step of producing offspring from said substantially all of said plurality of nonhuman female mammals comprises producing offspring in a single parturition of each of said substantially all of said plurality of nonhuman female mammals.